

Control of Vector-Borne Diseases in Urban Environments



John C. Beier
Global Public Health Program
University of Miami



Overall Goal

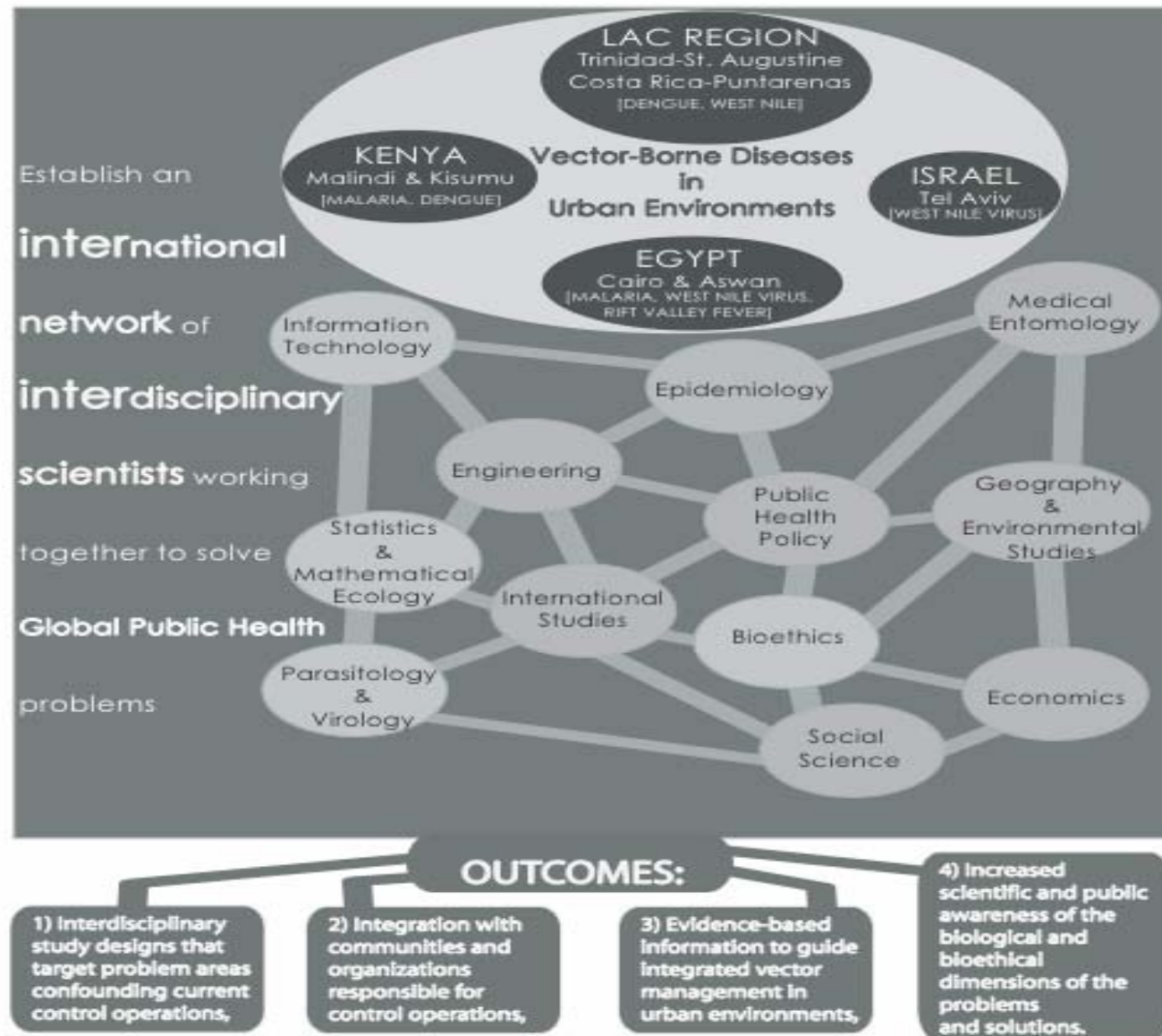
The overall goal is to develop new interdisciplinary strategies for controlling the transmission of vector-borne pathogens in urban environments



International Partners

- Kenya -- International Centre of Insect Physiology and Ecology (ICIPE)
 - Malindi and Kisumu -- MALARIA
- Egypt -- Ain Shams University
 - Cairo and Aswan -- MALARIA, WN and RVF
- Israel -- Hebrew University
 - Tel Aviv -- WN
- Costa Rica -- University of Costa Rica
 - Punteranas -- DENGUE
- Trinidad -- University of West Indies
 - Curepe, St. Augustine -- DENGUE

The goal of the **InterVector Exploratory Center** is to develop new **international and interdisciplinary strategies** for controlling the transmission of vector-borne diseases in urban environments





Specific Aims

- **Construct study designs that incorporate interdisciplinary approaches for problem-solving strategies that are relevant to the ecology and control of vector-borne diseases in urban environments**
- **Assess current and future risks of vector-borne diseases at each selected city through interdisciplinary assessments of entomological, epidemiological, environmental, and demographic parameters**
- **Conduct small-scale field studies in each of the selected cities to obtain further interdisciplinary information on key factors affecting the spatial and temporal risks of mosquito-human contact and vector-borne diseases**
- **Strengthen capacity for harnessing the power of interdisciplinary approaches for controlling vector-borne diseases in urban environments**



Barriers and Solutions to Effective Collaboration

- BARRIER -- We have found that the complexity of collaboration across disciplines increases as research teams are geographically separated by international boundaries and lack an efficient means of sharing information, data, and documents
- SOLUTIONS --
 - Traditional -- meetings, workshops, seminars, email, phone, etc.
 - New approaches that emphasize the information superhighway as a critical tool in improving interdisciplinary collaboration.



CyberScientists -- Global Collaboration and Management Support System

- a repository for protocols, reports, maps, and updates for each study site
- scientists' home pages with research interests contact information
- workshop updates
- short course discussions
- interdisciplinary workgroups
- interdisciplinary discussion topics
- collaborative proposal area for planning



Activities to Promote Interdisciplinary Collaboration

- Seminars and symposia at UM and at foreign sites
- InterVector short course
- Development of study protocols and field sampling of mosquitoes, disease data, and incorporation of GIS/remote sensing and ecological modeling components
- Analysis of current vector control operations for each country
- Development of a data management capacity
- Proposals for future funding



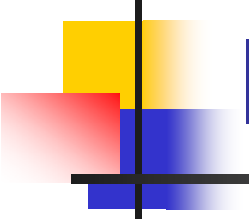
Responding to New Interdisciplinary Opportunities

- Health Diplomacy -- Jordan Valley Project -- co-sponsored a meeting on Peace Island that brought together mayors of 40 cities
- OneWater project at UM -- with private support, sent a team of 4 for filming in Kenya



Examples of how the University of Miami has been highly supportive

- Promoted the development of our network of interdisciplinary collaborators across 4 Schools and 12 Departments/Centers, strengthening our Global Public Health program at UM
- Facilitated the development of a masterplan for the academic component of our Global Public Health program
- Encouraged UM faculty participation in the international research and have provided Adjunct Faculty appointments to key foreign collaborators



Strategies for planning phase II of the program

- Last 6 months -- Planning meetings, ecological modeling seminar series, and CyberScientists focused discussion sessions
- Currently -- Disseminated PA's, formulated a draft plan, have developed working groups for each component (including CyberScientists workspace)
- Next Step -- Working group session in March, involving UM team and foreign teams